
410 NO-PASSING ZONES

410.1 LEGAL AUTHORITY

The purpose of the No-Passing Zone Program is to routinely check the existing no-passing zones along all 2 and 3-lane undivided highways in the State system and develop recommendations for appropriate striping changes. New no-passing zones are also established for new roadways under this program.

Authority for establishing no-passing zones is covered in Arizona Revised Statute 28-727. The No-Passing Zone (NPZ) Section Manager is empowered by the State Traffic Engineer to approve no-passing zones.

No-passing zones must be approved by the Manager, NPZ Section, before such zones are striped. Requests for sight obstruction removals must be approved by the Manager, NPZ Section.

410.2 WARRANTS

Passing sight distance on a vertical curve is the distance at which an object 4.25 feet above the pavement surface can just be seen from a point 3.50 feet above the pavement. Similarly, passing sight distance on a horizontal curve is the distance measured along the centerline between two points 3.50 feet above the pavement on a line tangent to the embankment or other obstruction that cuts off the view on the inside of the curve (see Figure 410-A).

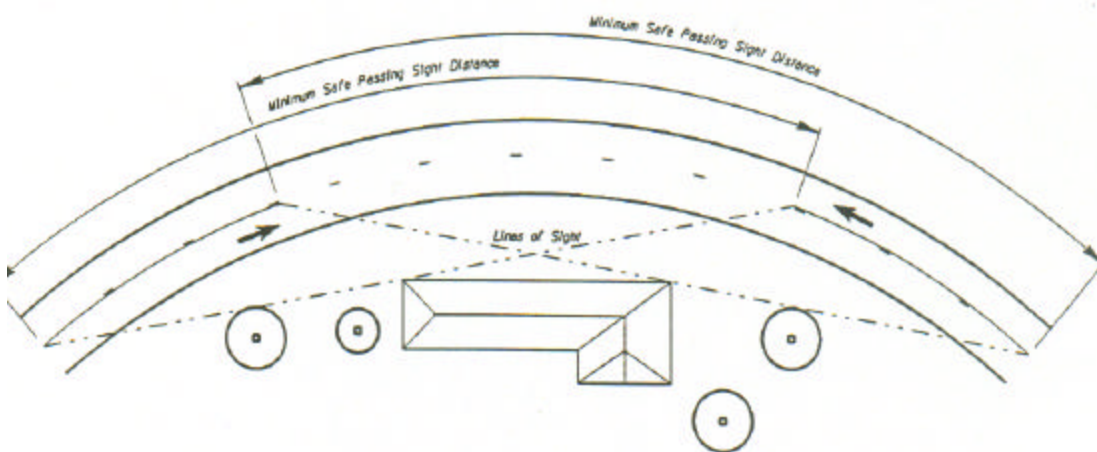


FIGURE 410-A
LIMITS OF NO-PASSING ZONES AT HORIZONTAL CURVES

A no-passing zone at a horizontal or vertical curve is warranted where the passing sight distance, as defined below, is less than the minimum necessary for safe passing at the posted speed or the prevailing off-peak 85th percentile speed:

TABLE 410-1 - NO-PASSING ZONE CRITERIA

Posted or 85th % Speed (MPH)	Minimum Passing Sight Distance	
	(Feet)	(Miles)
20	400	0.076
25	450	0.085
30	500	0.095
35	550	0.104
40	600	0.114
45	700	0.133
50	800	0.152
55	900	0.170
60	1000	0.189
65	1100	0.208
70	1200	0.227

Allowable Tolerances for Adjustments

The beginning of a no-passing zone is that point at which the passing sight distance first becomes less than that specified in Table 410-1. The end of the zone is that point at which the passing sight distance again becomes greater than or equal to the minimum specified. No field adjustments shall be made to the end of a zone to alter its location from the point established by a proper survey, with the exception that the end may be extended to coincide with the end of the nearest centerline stripe (see Figure 410-B).

Where a no-passing zone pennant sign (W14-3) exists at the beginning of a no-passing zone, a no-passing zone re-survey shall show a change of at least 120 feet before requiring that the sign be relocated.

Minimum Distance Between No-Passing Zones

The minimum distance between no-passing zones in an area having an 85th percentile speed of 55 miles per hour or more is 400 feet. This is a numerical guide and is subject to the judgment of the No-Passing Zone Crew when laying out no-passing zone striping. Any time the gap between no-passing zones falls below these minimums, the no-passing zones shall be joined together to become continuous (see Figure 410-C).

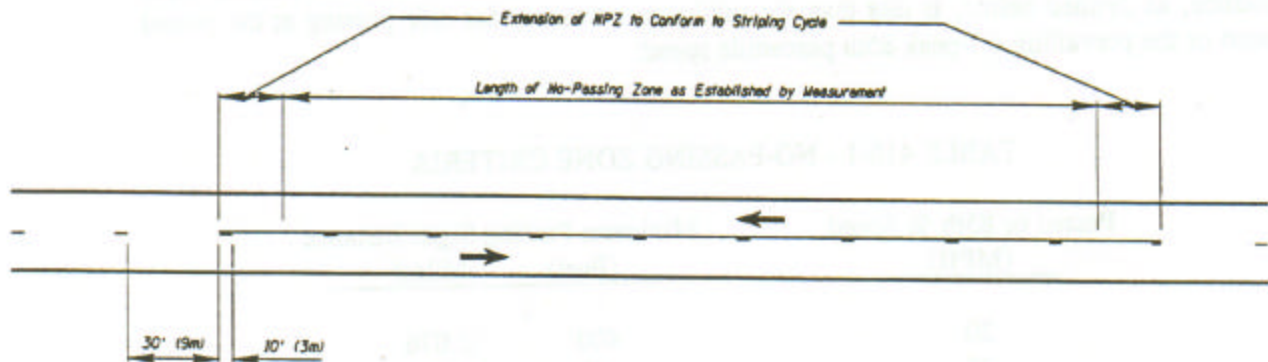


FIGURE 410-B
EXTENSION OF NO-PASSING ZONE STRIPING TO COINCIDE WITH THE
CENTERLINE STRIPING CYCLE

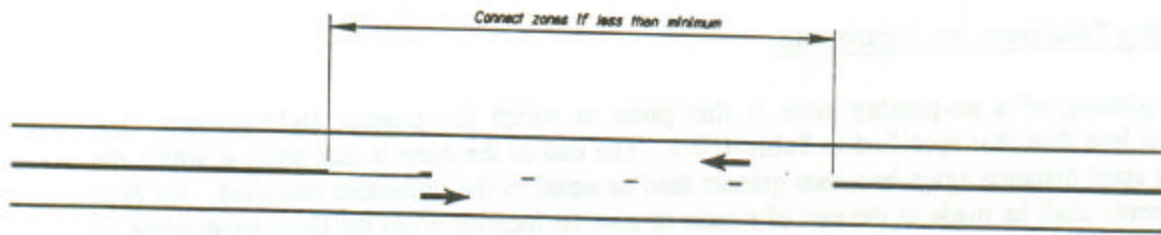


FIGURE 410-C - MINIMUM DISTANCE BETWEEN NO-PASSING ZONES

Questionable Sight Restrictions

Before no-passing zones are marked on the pavement, minor adjustments may be made to survey data so that the marking of sight restrictions of short duration are either extended to 500 feet (0.095 mile) or disregarded altogether. If extended, the addition shall be made to the beginning of the zone. Before a sight restriction of less than 500 feet is either installed or disregarded, close field examination shall be made, checking to see if the target vehicle is completely out of sight for approximately 150 feet. If the target vehicle does not go completely out of sight, the no-passing zone may be disregarded.

Sound judgment must be exercised by the No-Passing Zone Crew leader, taking into consideration distance traveled and time elapsed during the sight restriction and weighing these factors against the time which both drivers have to observe each other prior to reaching the sight obstruction. Whenever doubt exists, the no-passing zone shall be lengthened to 500 feet.

Removal of Sight Obstructions

When minor maintenance activity can be performed to remove sight obstructions, a "Request for Sight Obstruction Removal", signed by the Manager, NPZ Section, shall be sent to the appropriate Traffic Engineering Region for action. Requests for removal(s) of sight obstructions shall normally be limited to work needed to avoid extending a no-passing zone.

Minor brush removal may be performed by the No-Passing Zone Crew to avoid extending a no-passing zone.

Uphill Passing Lanes

For uphill passing lanes, the centerline for downhill traffic shall be solid from 500 feet in advance of the initial taper to 200 feet past the end of the terminal taper.

Conformance with Centerline Striping

After the final location of a beginning or an end of a no-passing zone is made, as set forth in this policy, the no-passing zone may only be lengthened to coincide with the striping cycle as shown in Figure 410-B.

New Construction/Reconstruction Projects

For new construction and reconstruction projects on two-lane and three-lane roadways, District or project personnel shall notify the No-Passing Zone Crew to schedule a no-passing zone survey two weeks prior to the application of the final surface course.

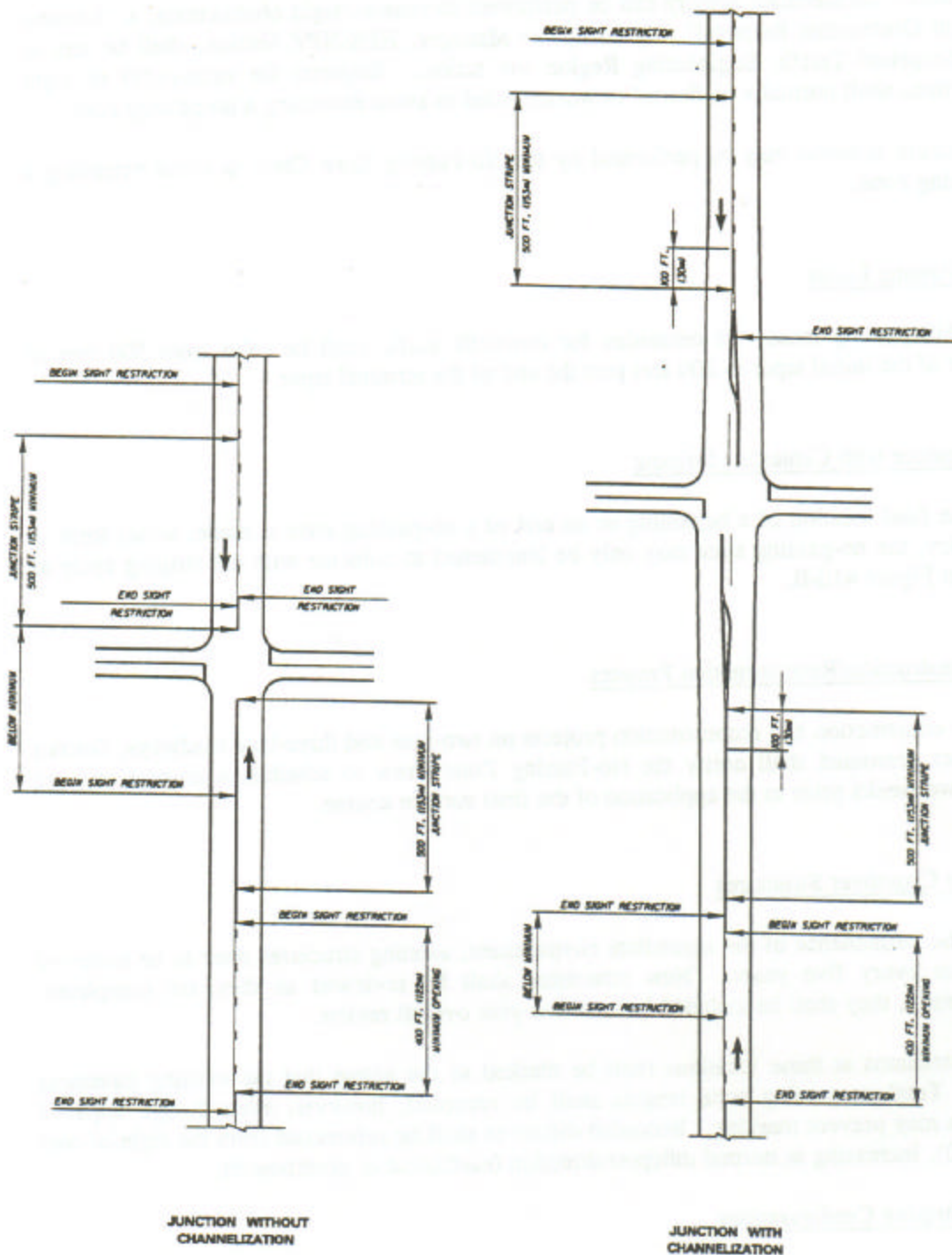
Interstate Crossover Structures

Due to the permanence of the immediate environment, existing structures need to be reviewed only once every five years. New structures shall be reviewed as they are completed. Subsequently, they shall be included in each five-year overall review.

Sight restrictions at these locations shall be marked to the extent that the existing pavement allows. Total no-passing zone lengths shall be recorded, however, even though unpaved roadways may prevent marking. Recorded distances shall be referenced from the right-of-way line (0.00), increasing in normal milepost direction (eastbound or northbound).

Special Striping Configurations

A special striping configuration may be installed at a junction where a certain combination of junction striping and striping due to sight restrictions dictates it is proper to do so (see Figure 410-D). Where the extension of a no-passing zone stripe is required to satisfy a requirement for junction striping, it may become necessary to join two no-passing zone stripes in the same direction, leaving an apparently short stripe for the opposite direction.



410.3 RECORDING

All barrier striping which prohibits passing shall be recorded. As a minimum, the following items shall be noted on the log sheets:

1. Location, Route, Milepost, and Direction
2. Date
3. Sight restrictions
4. Junction locations (see below)
5. Railroad crossing locations (see below)
6. Beginnings and ends of sections of three or more lanes or divided highways
7. Uphill passing section limits
8. Posted speed limit or 85th percentile speed
9. Milepost equations - short and long miles
10. Beginnings and ends of urban boundaries not reviewed

The abbreviations shown below shall be used to denote the reason for the beginning of barrier striping (see Figure 410-E):

- V = Vertical Sight Restriction
- LH = Left Horizontal Sight Restriction
- RH = Right Horizontal Sight Restriction
- JCT = Junction
- R/R = Railroad Crossing
- UPS = Uphill Passing Section
- DH = Divided Highway

Though many reasons for barrier striping may occur within one continuous stripe, only the reason for the beginning of the no-passing zone should normally be noted. Where a junction or railroad crossing is responsible for the ending location of barrier striping, its location shall be noted.

Forms for No-Passing Zone Work

The form and memos discussed here and shown in the attachments are those used on a regular basis for performing the surveying and reporting functions:

(1) No-Passing Zone Survey Record (See Figure 410-E)

This form is used in “working up” collected field data, as well as producing a permanent record of the survey.

(2) Log Sheet Transmittal Memo

When no signing and/or striping changes are required based on the no-passing zone survey, a copy of the permanent log sheet(s) shall be transmitted to the appropriate Regional Traffic Engineer for inclusion in the Region’s no-passing zone logbook. Milepost limits shown in the REGARDING (RE:) segment of the heading should delimit the extreme boundaries for which the survey was done, even though a no-passing zone may not exist for the first several miles of the route segment.

(3) Request for Striping and/or Signing Changes Memo

When signing and/or striping changes are required based on the no-passing zone survey, a memo requesting the changes shall be sent to the appropriate Regional Traffic Engineer. A copy of the permanent log sheet(s) shall be transmitted with the memo to the appropriate Regional Traffic Engineer for inclusion in the Region’s no-passing zone logbook.

To ensure that the changes are implemented as soon as possible, this memo shall be sent to the appropriate Regions immediately upon return from the field. The NPZ Section shall keep copies of these memos in a binder, by route, to verify that the Regions have been notified.

When the signing and/or striping changes have been completed, the Region shall return the memo to the NPZ Section indicating who performed the work and the date the work was completed.

(4) Request for Sight Obstruction Removal Memo

When sight obstruction removals are required based on the no-passing zone survey, a memo requesting the removals shall be sent to the appropriate Regional Traffic Engineer. A copy of the permanent log sheet(s) shall be transmitted with the memo to the appropriate Regional Traffic Engineer for inclusion in the Region’s no-passing zone logbook.

To ensure that sight obstructions will be removed as soon as possible, this memo shall be sent to the appropriate Region immediately upon returning from the field so that actual field conditions will accurately reflect what has been established by the survey. The NPZ Section shall keep copies of these memos in a binder, by route, to verify that Regions have been notified.

(5) Request for Striping and/or Signing Changes and Sight Obstruction Removal Memo

To ensure that the changes are implemented as soon as possible, this memo shall be sent to the appropriate Regions immediately upon return from the field. The NPZ Section shall keep copies of these memos in a binder, by route, to verify that the Regions have been notified.

When the changes have been implemented, the Region shall return the memo to the NPZ Section indicating who performed the changes and the date the work was completed.

NO-PASSING ZONE SURVEY RECORD

ROUTE _____ DATE _____ MP. _____ TO MP. _____

NO-PASSING ZONE		SPEED LIMIT	NO-PASSING ZONE		REFERENCE
DIRECTION	↑		DIRECTION	↓	
MILEPOST LOCATIONS	LENGTH & POST	MILEPOST	MILEPOST LOCATIONS	LENGTH & POST	
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
APD			APD		
BEG	—		BEG	—	
END			END		
LEFT OF CENTER LINE			RIGHT OF CENTER LINE		